



SOLUTION BRIEF

Areca Energy Storage: Backup Power

The revolutionary backup power solution that harnesses the reliability and sustainability of hybrid supercapacitor technology

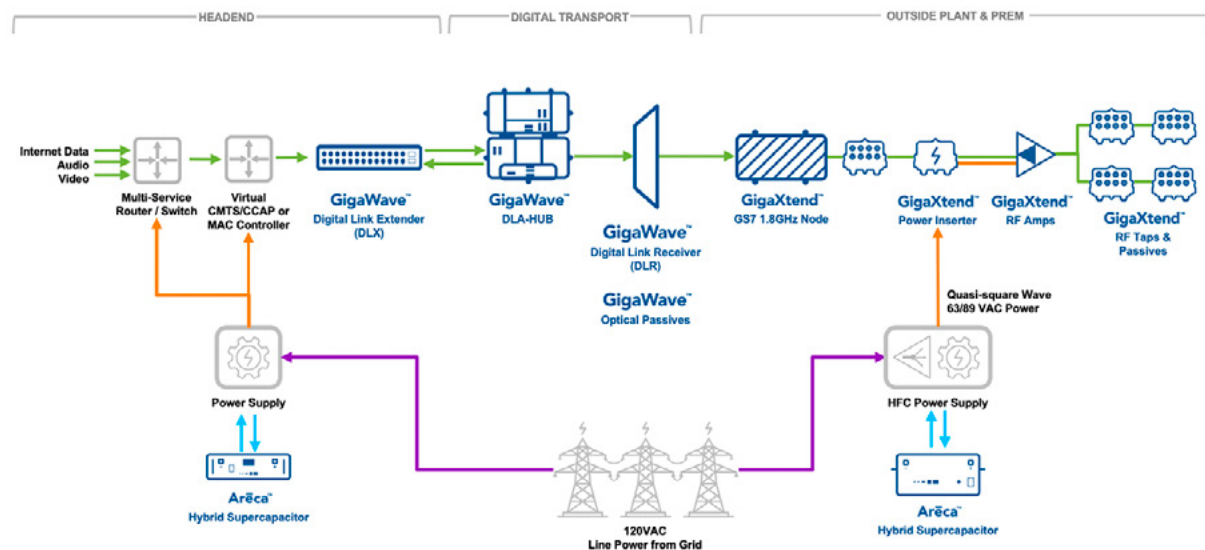
Uninterrupted power is paramount for communication networks, particularly in critical infrastructures like datacenters, headends, outside plants, mobile cell sites and remote locations. MSOs and other communication service providers have relied primarily on traditional energy storage sources, such as valve regulated lead acid (VRLA) batteries, to guard against service disruptions caused by power failures. These not-always-reliable solutions and other electrochemical mediums are plagued by several shortcomings, including consuming valuable real estate in both

the inside and outside plant, limited lifespans and susceptibility to chemical leaks, fires and other environmentally unfriendly events.

Based on hybrid supercapacitor technology that discharges energy electrostatically, ATX's Areca™ family of energy storage modules addresses the shortcomings of traditional electrochemical energy storage mediums, enabling service providers to fully modernize their backup power operations while increasing reliability, improving

safety and reducing long-term costs. Areca hybrid supercapacitors offer unparalleled benefits such as space optimization, reliability, longevity, high cycle life, safety and environmental sustainability. By leveraging the power of Areca hybrid supercapacitor energy storage backup power solutions, organizations can futureproof their infrastructure, minimize downtime, reduce energy costs and uphold their commitment to improving the sustainability of the planet.

Areca Energy Storage Backup Power Solution



ATX Areca energy storage modules provide backup power services throughout the cable network, as well as in fiber and wireless environments.

Regain Space and Improve Installation Efficiency

Not prone to chemical leaks, fires or other environmental risks, Areca hybrid supercapacitors are safe for indoor or outdoor deployments, eliminating the need for dedicated rooms typically required for indoor installations of lead-acid or lithium-ion batteries. This deploy-anywhere attribute enables service providers to reclaim valuable indoor space in facilities such as datacenters and headends, while also eliminating costs associated with the accommodation of special safety requirements, such as sprinkler systems or other risk-mitigation installations.

The flexibility to integrate rack-mountable Areca hybrid supercapacitors into existing infrastructure empowers communication service providers to optimize their spatial footprint while accelerating energy storage installations by eliminating the need for expensive and time-consuming permitting.

Areca hybrid supercapacitors require considerably less space and are 2/3 lighter than deep-cycle lead-acid batteries.

Outside Plant Energy Storage Cabinet

VRLA Batteries



Areca Hybrid Supercapacitor, 36V

Inside Plant Energy Storage Racks

VRLA and Lithium-Type Batteries



Areca Hybrid Supercapacitor, 48V



Protect Remote and Environmentally Inhospitable Locations with Reliable Backup Power

Backup power is critical for any outside plant or mobile cell site to ensure continuous service during power outages. In remote, or hard-to-reach areas, maintaining reliable backup power operations is often a challenge due to logistical constraints and environmental factors. Areca hybrid supercapacitors are designed to overcome these challenges, enabling communication service providers to ensure the continuous delivery of services in remote communities



Areca's energy storage modules are designed to provide reliable and safe energy storage operations in a variety of use cases and locations, regardless of environmental conditions.

and in extreme weather. Areca energy storage technology tolerates temperatures of -40°C to $+60^{\circ}\text{C}$. Areca hybrid supercapacitors' low maintenance requirements and ability to operate in extremely low or high temperatures ensure uninterrupted operation with reduced site visits, assisting communication operators in overcoming costly geographical obstacles to deliver consistent services to end users regardless of location.

Improve Your Company's Safety and Sustainability Record

Unlike lead-acid or lithium-ion batteries, Areca hybrid supercapacitors pose no risk of harmful off-gassing or thermal runaway, making them inherently safer for installation and operation in any environment. In addition to protecting property and personnel from potential hazards, moving to an energy storage medium that doesn't require a chemical reaction in the cathode to discharge energy provides added insurance against fires or explosions should a backup storage device become overheated or physically distressed.

Additionally, Areca hybrid supercapacitors represent a greener and more sustainable alternative to traditional energy storage

mediums, with a lifespan of up to 20 plus years, significantly outperforming conventional battery technologies while reducing your company's carbon footprint. Areca hybrid supercapacitors can also be used to improve energy efficiency through peak shaving, as described in the following section.



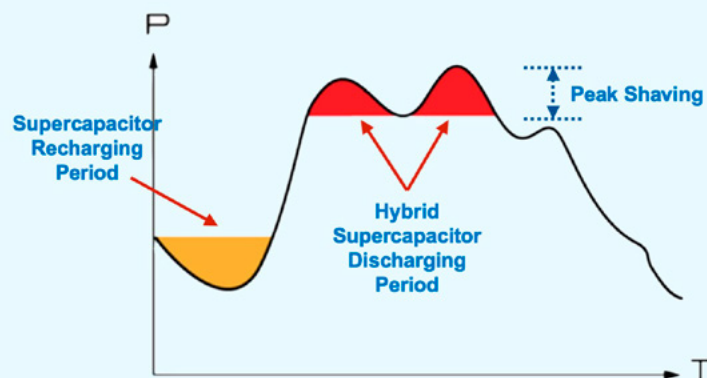
Areca hybrid supercapacitors, essentially a set-it-and-forget-it energy storage solution, eliminate the need for maintenance and replacement site visits for up to 20 plus years, significantly cutting down on carbon emissions for operators using fuel-powered vehicles.

Put Idle Energy in Your Business to Work

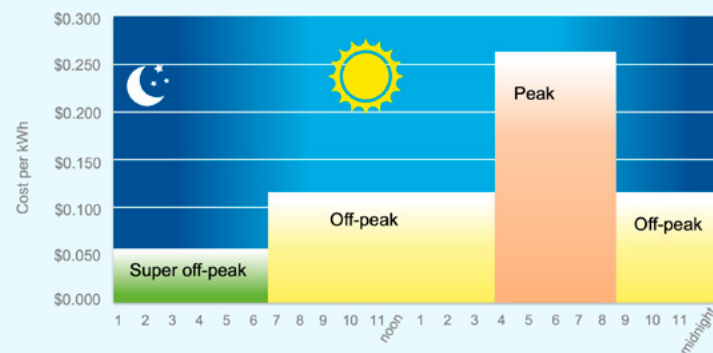
Most conventional energy storage solutions are dedicated to backup power operations, sitting idle until reacting to a power interruption event before going into service. Due to their ability to quickly charge and recharge more than 20,000 times over their lifespans, Areca hybrid supercapacitors can be deployed to perform both reactive and proactive energy

storage operations. That means Areca is the perfect platform for peak shaving, an energy-saving procedure that enables communications service providers to power their networks with idle stored energy when electricity fees are at their highest, and then reconnect to the grid to recharge storage mediums when rates are at their most affordable. In addition to improving energy

efficiency, peak shaving and other energy arbitrage procedures can help service providers accelerate their return on investment. Unlike their battery counterparts, Areca hybrid supercapacitors maintain their longevity even with repeated cycling, making them a durable and sustainable solution for both reactive and proactive energy storage needs.



Time of Use Rates
Energy Rates Vary by Time-of-Day



Communication service providers can significantly reduce energy costs by using Areca hybrid supercapacitors to power their sites during peak energy rate hours and recharge from the grid during off-peak hours when rates are lower.

Areca Hybrid Supercapacitors



The Future of
Standby Power

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Benefits

Smaller footprint and lighter-weight design compared to lead-acid and lithium-ion batteries **enable** space optimization. Insusceptibility to fires, leaks or other safety concerns means that businesses adopting Areca can **save** on dedicated facilities that traditional electrochemical energy storage devices require.

Achieve uncompromised reliability and extend the longevity of your energy storage backup power investment through the platform's ability to discharge 100% of stored energy without degradation.

Areca's long lifespan and minimal maintenance requirements help communications service providers **reduce** their long-term energy storage costs.

By eliminating the need to protect facilities and personnel from toxic off-gassing, thermal runaway and other hazards, Areca empowers businesses to **cut** costs and **reduce** installation complexity associated with alternative solutions.

Improve energy efficiency and **accelerate** ROI timelines by leveraging Areca's ability to support peak shaving and other proactive energy arbitrage procedures.

Areca Hybrid Supercapacitors

ATX's Areca hybrid supercapacitor modules provide telecommunications operators — both fixed and mobile — with an environmentally clean, safe, space-efficient and long-lasting energy storage solution designed to accommodate future infrastructure expansion while increasing reliability and reducing the overall cost of ensuring continuous operations. Areca hybrid supercapacitor technology is eco-friendly, posing no risks of chemical leaks or thermal runaway. Safe for indoor and outdoor deployments, Areca hybrid supercapacitor energy storage solutions include 36V and 48V modules that support a variety of kilowatt-hour (kWh) configurations and fit into standard outdoor enclosures or 19, 23 or 29-inch racks.

Features

- ✓ Utilize the best qualities of Lithium-Ion and electric double layer capacitor (EDLC) technologies
- ✓ Graphene supercapacitor cells eliminate risk of thermal runaway
- ✓ Safely supports high cycling to participate in energy arbitrage
- ✓ Wide operating temperature range
- ✓ High energy transfer efficiency
- ✓ Leverage existing power supply & housing for ease of deployment
- ✓ Environmentally friendly to reduce HVAC costs
- ✓ Low maintenance





**MAKING THE
CONNECTION**

About ATX Networks

ATX Networks is a global leader in broadband access and media distribution solutions. ATX's market-leading and award-winning solutions are based on Agile Innovation design principles, enabling communications service providers to futureproof and evolve their networks in lockstep with market demand. ATX partners with the world's most innovative cable, satellite, fixed telecom, wireless and media broadcast service providers to improve people's lives by enabling affordable and reliable broadband connectivity and media content for everyone, everywhere. For further information, visit ATX at www.atx.com, and follow us on [LinkedIn](#).

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